Ultraviolet Lamps

By WARD HARRISON

Mr. Harrison

THERE are now marketed by the Incandescent Lamp Department of the General Electric Company five different lamps which produce ultraviolet radiation in some degree: S-1 Lamps; S-2 Lamps; G-5 Lamps; G-1 Lamps; CX Lamps; all of them are illustrated on the opposite page.

The list of lamps naturally suggests the question of why there should be these several types. Is there a need for all of them in a field so new and of such relatively small demand? Probably the best answer is a description of the various functions and limitations of each type.

S-1 Lamp

The S-1 lamp is the most powerful ultraviolet source of the five types listed. At a given distance it will produce erythema, or reddening of the skin, in not more than one-sixth of the time of any of the others. The warmth from the lamp is an advantage, for it minimizes the possibility of one's taking cold.

There are, however, factors which militate against the universal employment of the S-1 lamp.

(a) A portable S-1 lamp gives rather too much visible light for comfort, particularly if one is trying to work; this is not a serious disadvantage because the time required for treatment is short.

(b) A transformer is required which makes the equipment for the lamp relatively heavy.

(c) Because of the transformer and the auxiliary parts, the equipment is in the \$60—\$70 price class.

In spite of these factors it is unquestionably true that one obtains the most ultraviolet for his money by employing the S-1 lamp, and where an ample supply of ultraviolet is the real requirement this lamp should be chosen.

S-2 Lamp

The S-2 lamp is a smaller, lighter and less expensive edition of the S-1. It consumes about three-fifths the wattage; the equipment with the transformer weighs less than half as much and costs about half as much. It gives about one-eighth as much ultraviolet. The visible light is much reduced in comparison with the S-1, and the lamp may be used comfortably for reading or sewing (with the book held outside the main beam) while the sunbath is being taken. This feature in some measure compensates for the greater time required for a treatment. S-2 equipments, because of their relatively smaller size, admit of more artistic design and many of the portables are suitable in appearance for the living room or the library. Because of this feature and because of lower price, this lamp will no doubt continue to enjoy a wider popularity than the S-1.

G-5 Lamp

In several respects this lamp is approximately the equivalent of the S-2. Its cost, complete with transformer, is about the same and its ultraviolet output is about equivalent; its energy consumption is about one-half as much. The G-5 gives very little visible light and what there is, has the characteristic green color of mercury vapor. As a portable unit it would appear to be a competitor of the S-2 rather than a lamp filling a different field. Time will indicate which will prevail. Our present opinion as regards reliability of operation and continuity of ultraviolet emission is in favor of the S-2 lamp.

G-1 Lamp

The wattage consumed by this lamp is low but it emits only about one-fifth as much ultraviolet as the S-2 lamp. We believe it to be insufficient in power to be satisfactory as a portable lamp for either ultraviolet application or visible light. Its principal application is for use in brooders where at close range it has been found to supply plenty of ultraviolet for chicks.

CX Lamp

The CX lamps have been standardized for heater lamps. A 500-watt CX lamp gives about the same amount of ultraviolet as the G-1, namely, about one-fifth as much as an S-2, or one fiftieth as much as the S-1. The CX lamp is therefore in the same position as the G-1; that is, it gives too little ultraviolet in comparison with the others to be recommended for that purpose. On the other hand, both the 500-watt CX lamp and the standard 500-watt MAZDA make excellent heater lamps for therapeutic purposes and in this respect are superior to either a hot water bottle or a carbon heater lamp, the reason being that the radiation from the high temperature tungsten filament penetrates farther below the surface of the skin. As a heater lamp the CX is generally preferred to the ordinary MAZDA lamp because the slight amount of ultraviolet it furnishes for no extra energy consumption is usually considered advantageous. The CX lamp is the only one of the five lamps discussed which is regularly available for use on direct current and requires no auxiliary transformers or ballast resistance for use on 110–120-volt circuits either AC or DC.

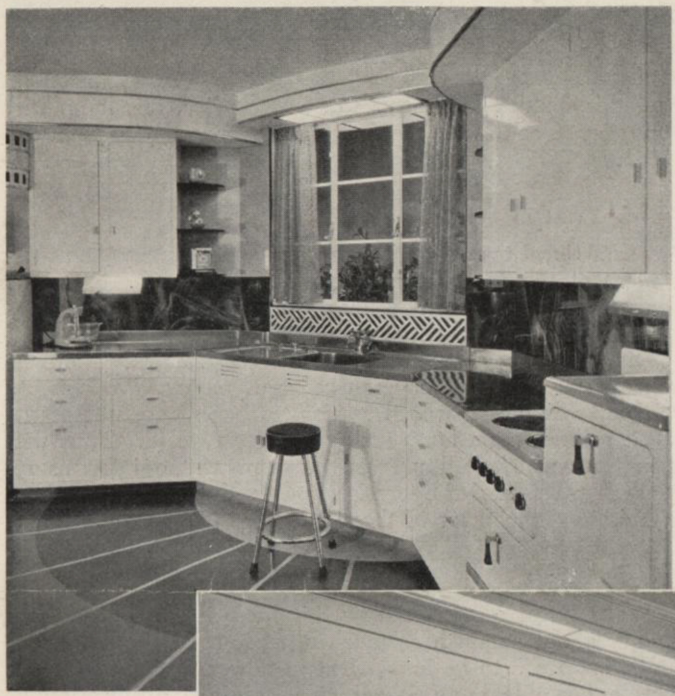
Cleve - Nela Park

CLEVELAND PUBLIC LIBRARY
BUSINESS INFORMATION BUREAU
SUBJECT FILE

The New G-E INSTITUTE

LOOKING forward to the prosperous days heralded by the nation's recovery spirit, two great departments of the General Electric Company have joined forces to establish at Nela Park a complete demonstration laboratory. The Incandescent Lamp Department and the Refrigeration Department are the sponsors of the splendid new G. E. Institute.

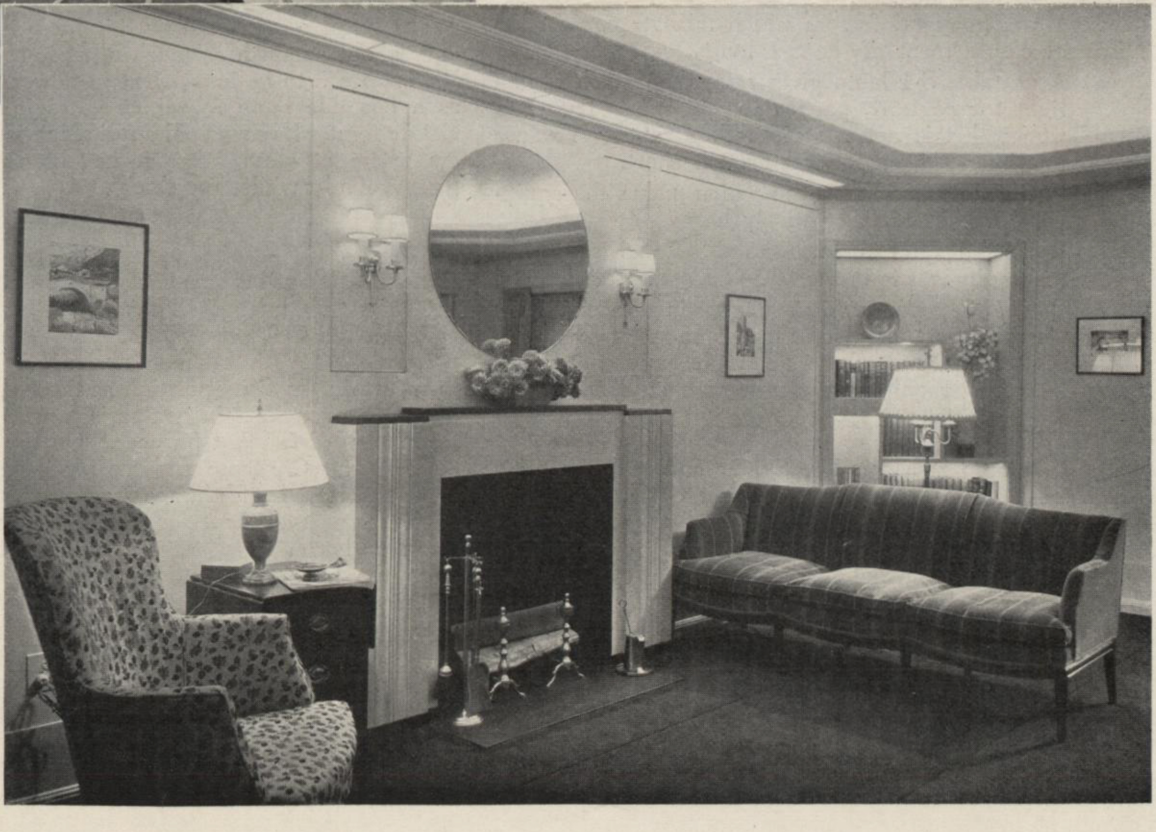
The illustrations on these pages give only a glimpse of the things to be seen. They do give an indication of the way the future of the electrical business is viewed from Nela Park. All these demonstration rooms anticipate a higher standard of living. With faith in the country's will to progress, the sponsors of the G. E. Institute bid for better business with better things.



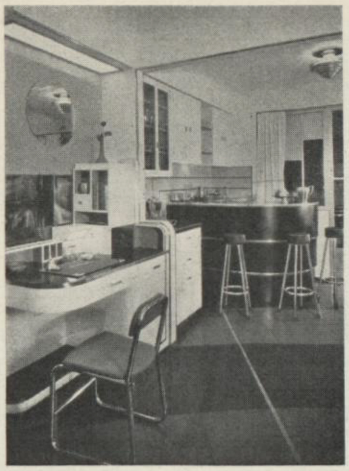
The lobby, shown above, has been built and decorated to make it a greeting place with a genuine welcome. More than the casual observer notices, the subtleties of color and texture and decorative harmony have been designed to provide definite effects. Lighting men will see that the illumination complements the simplicity of the lobby with the modern ceiling fixture shown in the picture.

The materials of the new electric kitchens include considerable polished metal in the working surfaces. Indirect local lighting has been the necessary answer, and that is what you find in the kitchen at the G. E. Institute. You should notice particularly the soffit unit built over the dishwasher. By this means a "piece of the sky" is brought indoors.

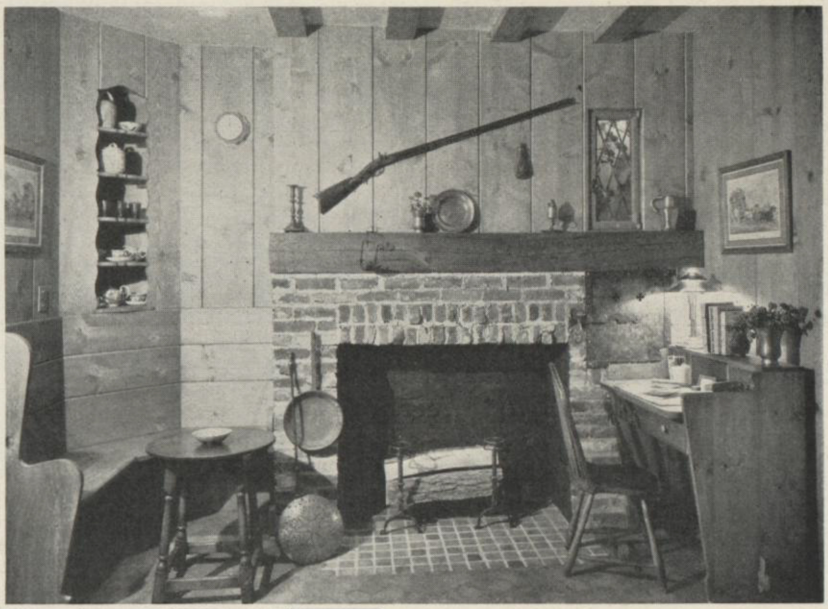
The Science of Seeing may sound too complex for home use, but in the living room, shown below, you see a room that has been lighted scientifically. Light has been used here to provide nearly perfect conditions. Light is employable from several sources, and in various combinations, all according to the need or mood.

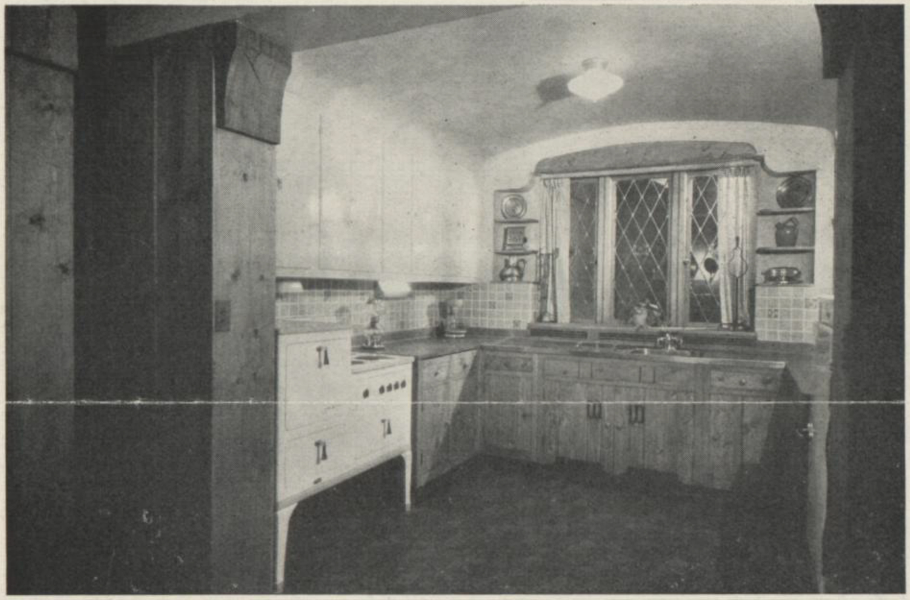


1933

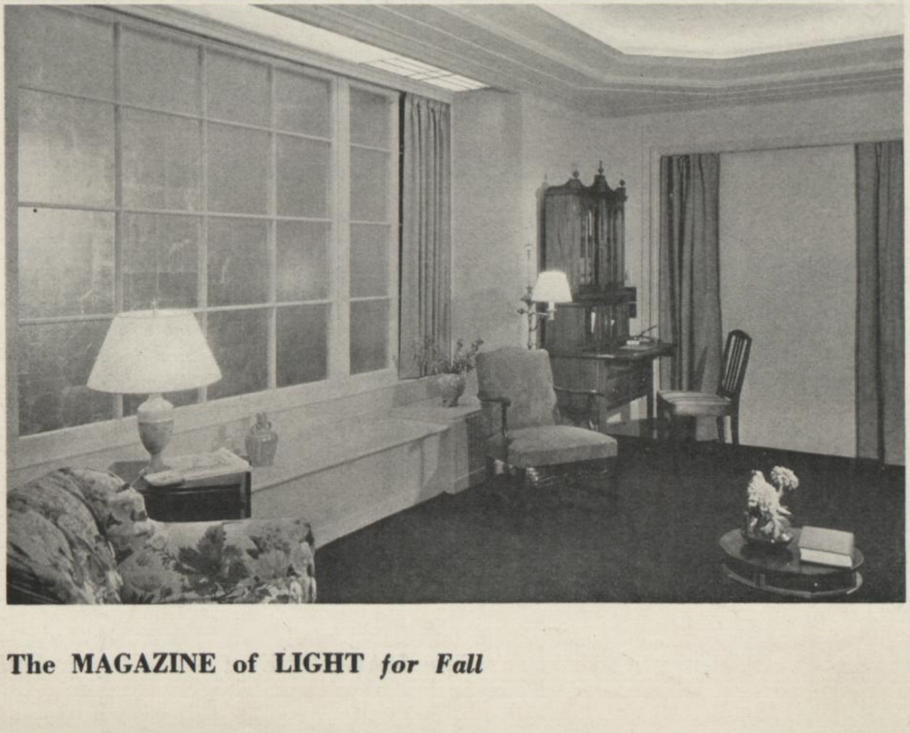


The planning table in the G. E. Institute will delight every woman who sees it. The soffit lighting over the table eliminates all shadows, and yet provides such ample illumination that milady is assured satisfaction plus.



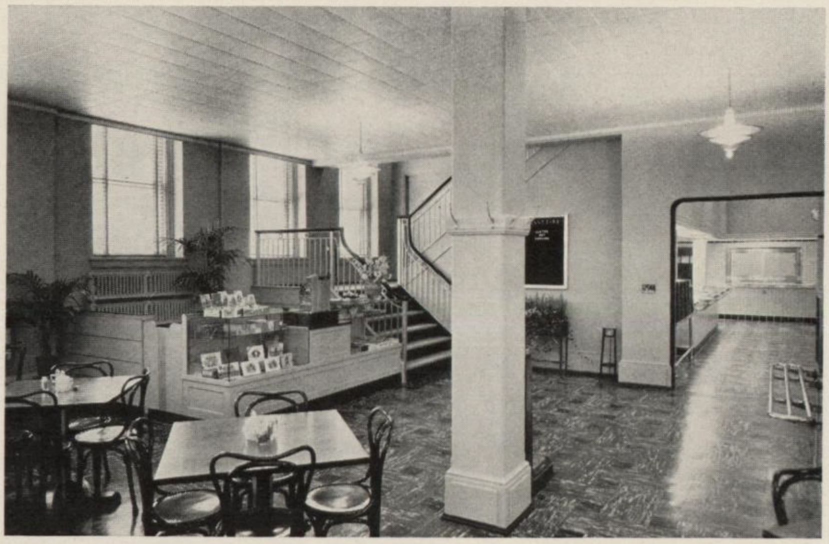


The Early American rooms demonstrate the adaptability of modern lighting to period decoration. The view above shows the lovely breakfast nook. The view (left) shows the adjoining kitchen in which all the modern electrical equipment is employed. Below, the Institute building.

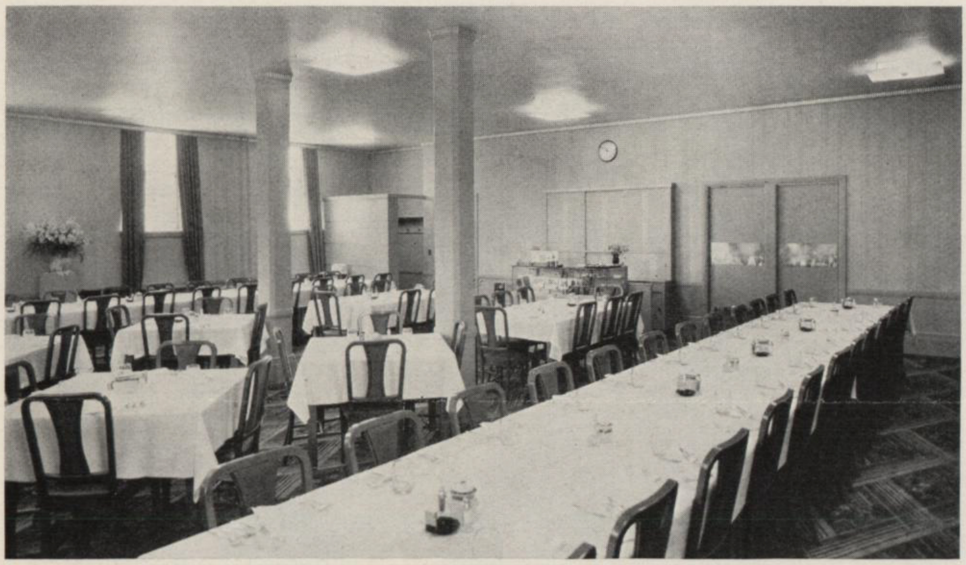


The opposite side of the living room, shown on the facing page. The important feature on this side of the room is the soffit lighting which helps to provide a daylight contribution from the mica-glazed "window" below. Here again you see the completeness of the "lighting for living" ideal.

Many readers of this magazine have attended lighting schools in the space now occupied by the Nela Park Dining Service. It would surprise them to see the inviting new luncheon places and modern kitchens which have taken the place of their erstwhile classrooms. Just around the corner from the stairway are the ultra-modern serving tables with 40 footcandles of light from clever built-in sources, giving the food lots of appetite appeal.

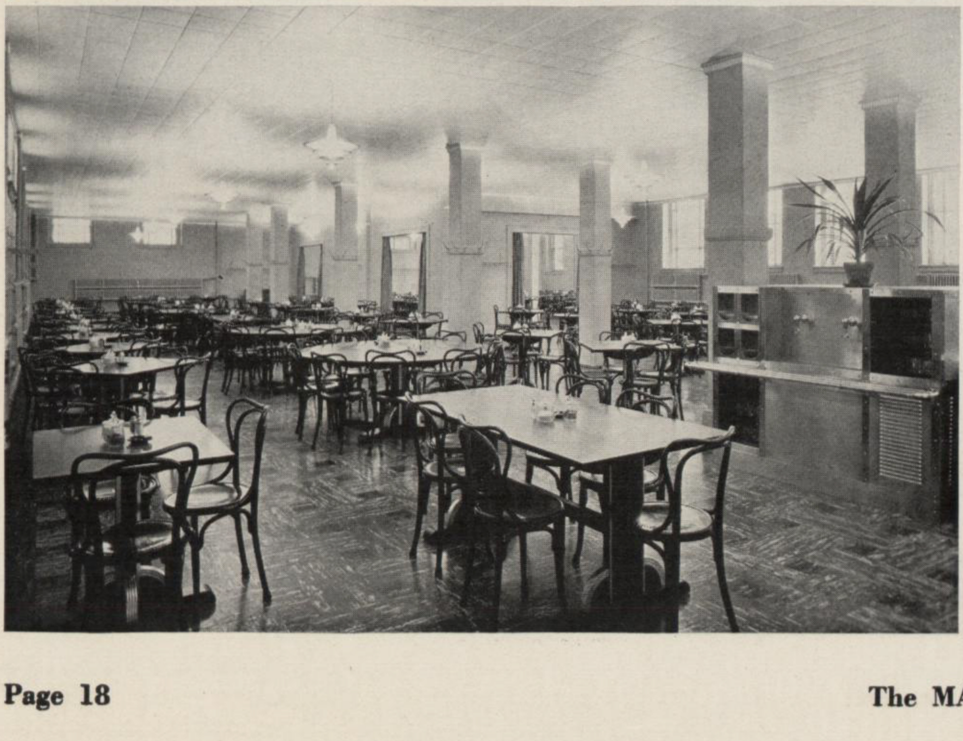


Two New Dining Rooms at Nela Park



THE RESTAURANT

Nela Park provides two types of dining. In the view to the left we see the restaurant, where table service may be had. This room has been decorated in warm colors with a very distinctive effect. The lighting units add a consistent modernistic note. They were made by Enterprise Electric Company, and they employ four 150-watt lamps per unit.



THE CAFETERIA

From the stairway shown at the top of the page you see this view of cafeteria's table space. The predominant color is green, and the black and silver tables against this background look very smart indeed. The lighting is from 500-watt Duplexalites (Miller Company) on 13′x14′ spacing. Although the principal service of the cafeteria is for noonday luncheons the equipment is in every respect adequate for three-meal-a-day demand.